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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/449,660	11/30/1999	JAMES WICHELMAN	10001186	6543

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AGILENT TECHNOLOGIES, INC.  
INTELLECTUAL PROPERTY ADMINISTRATION, LEGAL DEPT.  
P.O. BOX 7599  
M/S DL429  
LOVELAND, CO 80537-0599

[REDACTED] EXAMINER

VOLPER, THOMAS E

[REDACTED] ART UNIT

[REDACTED] PAPER NUMBER

2697

DATE MAILED: 01/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/449,660	WICHELMAN ET AL.
	Examiner Thomas Volper	Art Unit 2697

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1,3,5,6,8,11,13-16 and 19 is/are rejected.
- 7) Claim(s) 2,4,7,9,10,12,17,18 and 20 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 11/30/1999 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).\* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a)  The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
2. Claims 1 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsui et al. in view of Chen et al.
  - Regarding claims 1 and 13, Tsui discloses a system in which a workstation derives and displays on a display device a number of channel test results (col. 6, line 66 – col. 7, line 6). The system elements include a central processor (426), a system memory (425), and a display device (413), which are all coupled to the system bus (420) that serves as the local interface (col. 6, lines 38-45). The system stores analysis software in system memory, which implements the functionality of a diagnostic processor/monitor (col. 6, lines 49-52). This software provides the function of the test result interface logic of the present invention. Tsui fails to disclose at least one group of a number of nodes, each node having a number of channels. Tsui also fails to disclose that the software stored in the system memory provides node level and group level test results to be displayed on the display device (413). Chen discloses a two-way cable distribution system (col. 2, lines 36-65). Figure 1 illustrates a Head End (102), which acts like the group of nodes of the present invention. The Head End supports a number of Fiber Nodes (108), which in turn are connected to branch lines (118) and ultimately to subscriber cable modem (120). Chen

describes an iterative process of testing different path components for each frequency within a frequency range of a sub-band, which can be interpreted as a channel (col. 10, line 34 – col. 11, line 33). This is accomplished by using an echoing device that can be located anywhere in the downstream path of a cable system (col. 12, lines 3-8). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the system of Tsui to monitor channels in the cable system of Chen. It would have been obvious to place the echo device of Chen in a subscriber cable modem, fiber node, or head end for use in the system of Tsui to provide hierarchical test results on a channel, node, or group level respectively. One of ordinary skill in the art would have been motivated to do this because each segment of the cable system, whether it be coaxial cable, optical fiber, or another medium would yield different test results. It would be advantageous for an operator of the system of Tsui to view characteristics of the different segments to locate the source of a problem.

3. Claims 5, 6, 8, 11, 14, 15, 16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsui et al. in view of Chen et al. as applied to claims 1 and 13 above, and further in view of Hsu et al.

- Regarding claims 5 and 14, the teaching of Tsui et al. in view of Chen et al. provides all of the limitations except a channel plan graph that indicates a desired frequency spectrum of one of the nodes. Hsu discloses a graph that displays designated good channels, with associated frequency bands demonstrated by vertical lines, and their respective locations in a frequency spectrum (see Fig. 2). At the time the invention was made it would have been obvious to a person of ordinary skill in the art to use this graph to display the desired frequency spectrum and

channel locations therein of one of the nodes of the aforementioned teaching. One of ordinary skill in the art would have been motivated to do this because it would give an operator of the system a reference to compare to an actual frequency spectrum in order to assure that the system was operating in the best mode.

- Regarding claims 6 and 15, the teaching of Tsui et al. in view of Chen et al. provides all of the limitations except a graph indicating the total node power with respect to time. Hsu discloses a graph that measures power with respect to time (see Fig. 1). At the time the invention was made it would have been obvious to a person of ordinary skill in the art to use this graph to display the total power of a node with respect to time. One of ordinary skill in the art would have been motivated to do this in order to track power fluctuations at a node to determine if a particular node is operating efficiently or if a problem, such as power dissipation, needs to be addressed.

- Regarding claims 8 and 16, the teaching of Tsui et al. in view of Chen et al. provides the limitation of determining the carrier-to-noise ratio of frequencies within a sub-band (Chen: col. 10, 51-62). The teaching fails to disclose using a graph to display the carrier-to-noise ratio with respect to time for a channel. Hsu discloses a graph that displays power with respect to time (see Fig. 1). At the time the invention was made it would have been obvious to use the graph of Hsu to display the carrier-to-noise ratio with respect to time of a sub-band, or channel, as an alternative to displaying power with respect to time. One of ordinary skill in the art would have been motivated to do this to measure noise fluctuations of a particular channel to identify when noise renders a channel unusable.

- Regarding claims 11 and 19, the teaching of Tsui et al. in view of Chen et al. provides the limitation of determining a signal-to-noise ratio at a certain power level of transmission for a particular frequency within a particular sub-band (Chen: col. 11, lines 20-33). The actual magnitude of the noise power is implicit in this ratio because the power level of transmission is known. The aforementioned teaching fails to provide a graph for displaying the channel noise magnitude versus time. Hsu discloses a graph that displays power versus time (see Fig. 1). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to display the signal-to-noise ratio of Chen with respect to time on the graph of Hsu. One of ordinary skill in the art would have been motivated to do this in order to determine when the noise power at a particular frequency became unacceptable and to switch to a different frequency.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsui et al. in view of Chen et al. as applied to claims 1 and 13 above, and further in view of Schwartz and Hsu et al.

- Regarding claim 3, the teaching of Tsui et al. in view of Chen et al. provides all the limitations of claim 3 except a group total node power graph indicating a power range for a number of nodes. Schwartz discloses fault detection in a frequency duplexed system, with a structure similar to that of the aforementioned teaching (Fig. 6), in which a detected power level is compared to an accepted range (col. 8, lines 12-17). Hsu et al. discloses a graph that plots power versus time. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to display the detected power level and show the accepted range on a graph like that of Hsu, where the power is not plotted versus time, but versus each node. One of

ordinary skill in the art would have been motivated to do this in order to detect a fault of a node associated with a particular group of interest.

***Allowable Subject Matter***

5. Claims 2, 4, 7, 9, 10, 12, 17, 18 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

- Regarding claim 2, the prior art does not teach a node information table listing the nodes associated with a group

- Regarding claims 4, 9 and 17, the prior art fails to disclose measuring an average channel or node percent availability and graphing this with respect to time.

- Regarding claim 7, while prior art does disclose a frequency spectrum graph, it does not disclose a node spectrum scan indicating a frequency spectrum with respect to time.

- Regarding claims 10 and 18, the prior art fails to disclose taking an average channel noise power of all of the channels associated with one node and graphing it with respect to time.

- Regarding claims 12 and 20, the prior art does not teach a channel burst counter, nor does it teach a graph displaying a number of channel burst with respect to burst duration length.

***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Miller et al. (US 5,930,231) Block Spectrum Receiver for a Broadband

Communications System

- Way (US 5,768,280) Two-Way Broadband CATV Communication Network Protocol  
and Monitoring Technology

7. Any inquiry concerning this communication, or earlier communications from the examiner should be directed to Thomas Volper whose telephone number is 703-305-8405 and fax number is 703-746-9467. The examiner can normally be reached between 9:00am and 6:30pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo, can be reached at 703-305-4798. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

tev

January 24, 2003



RICKY NGO  
PRIMARY EXAMINER